NOTE ON COLONY SIZE AND ACTIVITY IN POGONOMYRMEX OCCIDENTALIS (CRESSON)*

The colonies studied were located on the floodplain of Cave Creek at the Southwestern Research Station, 5 miles SW of Portal, Arizona. This site is at an elevation of 5400′ in an oak-pine woodland. One colony was excavated Feb. 26–29, 1959, just after colony activity began in the spring. The ants were placed in alcohol as they were uncovered and their numbers were estimated later by measuring the packed volume of all ants and counting the number of individuals in several 100 ml. samples. The number of foraging workers was estimated for four other colonies in Sept. and Oct. 1958 and July 1959, using the mark-release-recapture method (Chew, 1959. Jour. N. Y. Ent. Soc., **67**, 3, 4).

EXCAVATED COLONY. A total of 8700 ants was collected. If the size of the surface mound is a reliable index of colony size, 8700 ants would be about average for colones of *P. occidentalis* in the area studied. The ants were found in clusters of 100–500 at successively deeper levels. The last workers were found at a depth of 5½′, which was at the beginning of the C horizon in the soil profile. The queen was not found. The diameter of the area occupied by the colony did not exceed 2½′.

No pupae, larvae or eggs were found and fewer than 100 individuals appearing to be callows were taken (all in the upper foot of digging). Apparently *P. occidentalis* does not carry brood through the winter in this area. There were six caches of seeds, totalling about 175 ml. volume. The seeds were principally those of the telegraph weed, *Heterotheca subaxilaris;* about 5 percent were sprouting when found underground.

FORAGING WORKERS. On Feb. 25 the number of foraging ants was estimated as 248 in the colony to be excavated. As is to be expected, activity of the colony is achieved only slowly in the spring; apparently the ants in the upper part of the colony are warmed and become active first.

* Contribution from the Southwestern Research Station of the American Museum of Natural History, Portal, Arizona.

Estimates of foraging workers in four adjacent colonies, of about the same mound size as the excavated colony, ranged from 1500 to 4800 per colony in July, Sept. and October, as compared to a total of 8700 workers in the excavated colony.

In two other colonies, foraging workers were estimated at 525 and 1200 in July. Following this census, workers were removed daily from the surface around each mound for 5 days. After removal of 1029 individuals there was practically no outside activity at the first mound, but this may partly have been due to very wet weather in the last two days of the removal procedure. Removal of 1265 ants from the second nest did not noticeably reduce the number of foraging individuals.

These limited data suggest that for *P. occidentalis* in the area studied, no more than half the workers in a colony are active in foraging outside at any one time, even at the height of seasonal activity. However, many more data are needed before a reliable conclusion can be drawn.—ROBERT M. CHEW, *Dept. Biology, Univ. Southern California, Los Angeles.*